

- 81 -

We claim:

sub
AI → 1. A method of treating metastatic tumors in a subject, which method
comprises:

5 administering to a subject afflicted by metastatic tumors effective amounts of one
or more photosensitizer and one or more immuno-adjuvant, and
irradiating said subject with light absorbed by said one or more photosensitizer,
wherein said method is photochemical mediated photodynamic therapy (PDT).

10 2. A method of preventing or inhibiting the development of metastatic
tumors in a subject, which method comprises:
administering to a subject at risk for developing metastatic tumors effective
amounts of one or more photosensitizer and one or more immuno-adjuvant, and
irradiating said subject with light absorbed by said one or more photosensitizer.

15 3. A method of treating a primary tumor in a subject, which method
comprises:
administering to a subject clinically diagnosed with a primary tumor effective
amounts of one or more photosensitizer and one or more immuno-adjuvant, and
20 irradiating said subject with light absorbed by said one or more photosensitizer.

4. The method of claim 2 wherein said subject has previously undergone
cancer or tumor therapy.

25 5. The method of claim 1 wherein said effective amount of one or more
photosensitizer is in the range of 0.05 to 10 mg/kg.

- 82 -

6. The method of claim 5 wherein said effective amount of one or more photosensitizer is in the range of 0.05 to 1 mg/kg.

7. The method of claim 5 wherein said effective amount of one or more photosensitizer is in the range of 1 to 10 mg/kg.

8. The method of claim 1 wherein said one or more photosensitizer is administered intravenously and said one or more immuno-adjuvant is administered by injection into tumors after irradiation.

9. The method of claim 1 wherein said irradiation is localized to the tumors.

10. The method of claim 2 wherein said one or more photosensitizer is administered intravenously or intratumorally.

11. The method of claim 1 wherein said one or more photosensitizer is administered, and the subject irradiated, before administration of said one or more immuno-adjuvant.

12. The method of claim 1 wherein said one or more immuno-adjuvant is administered systemically.

13. The method of claim 1 wherein said one or more photosensitizer is a benzoporphyrin derivative (BPD) or a green porphyrin.

14. The method of claim 13 wherein the BPD is BPD-MA, EA6, or B3.

- 83 -

15. The method of claim 1 further comprising an additional irradiation, before irradiation with light absorbed by said one or more photosensitizer, with light of a wavelength which improves penetration of the absorbed light.

5 16. The method of claim 1 wherein said one or more immuno-adjuvant comprises mycobacterial cell wall skeleton and/or lipid A from a gram negative bacterium.

10 17. The method of claim 16 wherein said lipid A is de-3-O-acylated lipid A.

18. The method of claim 8 further comprising additional systemic administration of immuno-adjuvant to said subject.

15 19. The method of claim 18 wherein said additional systemic administration occurs at least from 1-3 times and occurs at an interval of about two weeks.

20 20. The method of claim 1 further comprising at least 1-3 repeats of the administering and irradiating steps.

21. The method of claim 14 wherein said BPD is BPD-MA.

~~22. A pharmaceutical composition to treat, prevent, or inhibit the development of, metastatic tumors, said composition comprising:
a photosensitizer and an immuno-adjuvant in amounts effective to treat, prevent,
25 or inhibit the development of, metastatic tumors, and
a pharmaceutically acceptable carrier or excipient.~~

- 84 -

23. The composition of claim 22 wherein the photosensitizer is a BPD or a green porphyrin.

24. The composition of claim 23 which is a liposomal formulation.

25. The composition of claim 23 wherein the BPD is BPD-MA, EA6, or B3.

26. The composition of claim 23 wherein said immuno-adjuvant comprises mycobacterial cell wall skeleton and lipid A from a gram negative bacterium.

27. The composition of claim 26 wherein said lipid A is de-3-O-acylated lipid A.

add
A³